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**IN THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**LISTING OF CLAIMS:**

1: (currently amended) A network element management system (NEMS) including processing equipment adapted to perform a method of analyzing a plurality of network elements configured to support at least one established communication path in a network, the method comprising:

receiving a notification signal, the notification signal indicative that a new communication path has been established in the network;

in response to receiving of the notification signal, querying a network element in the network for local network information;

receiving the local network information from the network element in response to querying, the local network information comprising one or more items selected from the group including topology information, connection information, and performance information;

analyzing the local network information received to map an established communication path in the network;

responsive to the local network information received and the established communication path mapped in the analyzing step, selecting a next network element of the established communication path for querying; and

if the next network element has been selected, iterating the method from the querying step for the next network element.

2. (cancelled)

3. (currently amended) The NEMS method as defined in claim 1, wherein the method further comprising comprises:

~~the step of determining network capacity using communication path data from the~~

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analyzing step.

4. (currently amended) The NEMS method as defined in claim 1, wherein the method further comprising comprises:  
~~the step of~~ determining network performance using [[the]] communication path data from the analyzing step.

5. (currently amended) The NEMS method as defined in claim 1, wherein the method further comprising comprises: ~~the step of~~ detecting network faults using communication path data from the analyzing step.

6. (currently amended) The NEMS method as defined in claim 1, wherein the topology information includes a routing table and wherein the connection information includes a connection table.

7. (cancelled)

8. (cancelled)

9. (cancelled)

10. (cancelled)

11. (cancelled)

12. (cancelled)

13. (currently amended) A network element management system (NEMS) including processing equipment adapted to perform a method for analyzing a plurality of network elements configured to support at least one established communication path of a network, the method comprising:

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receiving a notification signal from a network element, said notification signal indicative of a new established communication path in the network, said notification signal including circuit identifier information;

querying the network element in the network for connection information;

receiving the connection information from the network element in response to querying;

comparing the connection information with the circuit identifier information to determine a match condition; and

if the match condition occurs in the comparing step:

querying the network element for routing information;

receiving the routing information from the network element;

analyzing the routing information received to map the new established communication path in the network;

selecting a next network element to query along the new established communication path; and

if the next network element has been selected, fetching from the received circuit identifier information, circuit identifier information associated with the next network element and iterating the method from the step of querying for the connection information for the next network element.

14. (currently amended) The NEMS method as defined in claim 1, wherein the method further comprises comprising:

storing communication path data of the established communication path in the network.

15. (cancelled)

16. (currently amended) The NEMS method as defined in claim 13, wherein the method further comprises comprising:

storing communication path data of the established communication path in the network.

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17. (currently amended) Apparatus for analyzing a plurality of network elements interconnected to form a communication network and configured to support at least one established communication path in the communication network, the apparatus comprising:

means, responsive to receiving of a notification signal, for querying a network element in the communication network for local network information, the local network information comprising one or more items selected from the group including topology information, connection information, and performance information, wherein the notification signal is indicative that a new communication path has been established in the network;

means, responsive to receipt of the local network information, for analyzing the local network information received to map an established communication path in [[of]] the network; and

means, responsive to the local network information received and the established communication path mapped in the analyzing means, for selecting a next network element of the established communication path for querying;

wherein the means for querying is further responsive to a notification that the next network element has been selected.

18. (currently amended) The apparatus as defined in claim 17, wherein the querying means further comprises:

means for receiving [[a]] the notification signal from one or more network elements, the notification signal indicative of a network event, ~~and wherein the querying means is responsive to receiving said notification signal.~~

19. (currently amended) The apparatus as defined in claim 17, further comprising:

means for determining network capacity using communication path data of the established communication path from the analyzing means.

20. (currently amended) The apparatus as defined in claim 17, further comprising:

means for determining network performance using communication path data of

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the established communication path from the analyzing means.

21. (currently amended) The apparatus as defined in claim 17, further comprising:  
means for detecting network faults using communication path data of the established communication path from the analyzing means.
22. (currently amended) The apparatus as defined in claim 17, wherein the topology information includes a routing table and wherein the connection information includes a connection table.
23. (new) The apparatus as defined in claim 17, further comprising:  
means for storing communication path data of the established communication path in the network.
24. (new) The NEMS as defined in claim 13, wherein the method further comprises:  
determining network performance using communication path data about the established communication path mapped in the analyzing step.
25. (new) A computer readable storage medium storing instructions, wherein the instructions, when executed by a processor, cause the processor to perform a method for analyzing a plurality of network elements configured to support at least one established communication path in a network, the method comprising:  
receiving a notification signal, the notification signal indicative that a new communication path has been established in the network;  
in response to receiving of the notification signal, querying a network element in the network for local network information;  
receiving the local network information from the network element in response to querying, the local network information comprising one or more items selected from the group including topology information, connection information, and performance information;  
analyzing the local network information received to map an established

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communication path in the network;

responsive to the local network information received and the established communication path mapped in the analyzing step, selecting a next network element of the established communication path for querying; and

if the next network element has been selected, iterating the method from the querying step for the next network element.

26. (new) The computer readable storage medium as defined in claim 25, wherein the method further comprises:

determining network capacity using communication path data from the analyzing step.

27. (new) The computer readable storage medium as defined in claim 25, wherein the method further comprises:

determining network performance using communication path data from the analyzing step.

28. (new) The computer readable storage medium as defined in claim 25, wherein the method further comprises:

detecting network faults using communication path data from the analyzing step.